

Please replace the paragraph beginning at page 1, line 8 with the following rewritten paragraph:

12 In contrast to conventional silicon integrated circuits, MMICs comprising high-speed semiconductor devices such as that represented by HEMT (High Electron Mobility Transistor) or HBT (Hetero Bipolar Transistor) necessarily include a wave guide as the inner transmission line for high-frequency signals. Micro-strip lines are generally used as the high-frequency signal wave guide, because of their stable line characteristics and low dispersion characteristics which means that the frequency dependency of the propagation constant is weak.

Please replace the paragraph beginning at page 1, line 16 with the following rewritten paragraph:

13 As shown in FIG.1, the MMIC having a conventional multi-layered structure includes ground plate 3 formed on the semiconductor substrate 1 with the insertion of surface insulation film 2 therebetween, and ground plate 3 forms micro-strip lines together with line conductors 5 each formed on each of interlayer insulation films 4, respectively. In addition to line conductors 5, a pad 6 for the external connection is provided on the most upper interlayer insulation film 4.

14 Please replace the paragraph beginning at page 1, line 22 with the following rewritten paragraph: 15

The MMIC having multi-layered high-frequency micro-strip lines, as explained with reference to FIG.1, has features that are suited to high density integration, compared to MMICs

13  
and. having line conductors disposed in a single layer.

Please replace the paragraph beginning at page 2, line 2 with the following rewritten paragraph:

14 It is an object of the present invention to provide a structure of a three-dimensional MMIC designed by taking reliability into consideration.

Please replace the paragraph beginning at page 2, line 6 with the following rewritten paragraph:

15 The interlayer insulation film of such resin insulating material is relatively soft and is apt to deform when pressure is applied thereto. Pads, for instance, are subjected to a mechanical shock by the tip of a bonding tool during wire bonding thereto, and deformation is caused in the interlayer insulation film around there.

16 Please replace the paragraph beginning at page 2, line 10 with the following rewritten paragraph:

As a result, line conductor 5 on the most upper interlayer insulation film tends to peel off or bend. When wire bonding is over and application of the pressure by the bonding tool is removed, the interlayer insulation film can recover from the deformation by itself. However, the line conductor that is once peeled off or bent cannot be restored, and results in the change of its high-frequency transmission characteristics.

Please replace the paragraph beginning at page 2, line 17 with the following rewritten paragraph:

AP FIG.2 shows the essential concept of the present invention. As shown in the drawing, groove 7 is provided adjacent to pad 6, and thus, the PAD REGION and the WIRING REGION are physically separated from each other at least by the groove near the respective surfaces thereof. Accordingly, even when pad 6 is subjected to wire bonding processes, aforesaid deformation caused in the interlayer insulation film by the pressure applied to pad 6 is relaxed by the shape effect of groove 7, and the influence of the deformation on the WIRING REGION can be alleviated.

IN THE CLAIMS:

Amend claim 1 as follows:

- A1
1. (Amended) A high-frequency semiconductor device comprising:
    - a ground plate provided on a semiconductor substrate;
    - a plurality of line conductors provided on said ground plate, forming a multiple layer structure with interlayer insulation films intervening therebetween that is composed of a resin insulating material;
    - a pad provided on an upper surface of a most upper one of said interlayer insulation films;
    - and
    - a groove provided in said most upper one of said interlayer insulation films and between said pad and said line conductor on said upper surface of said most upper one of said interlayer insulation films.